Title (en)

New way to produce polypropylene grade in a sequential process

Title (de)

Neue Methode zur Herstellung von reinem Polypropylen in einem sequentiellen Verfahren

Title (fr)

Nouvelle manière de produire un grade de polypropylène dans un processus séquentiel

Publication

EP 2341087 B1 20140409 (EN)

Application

EP 09181006 A 20091230

Priority

EP 09181006 A 20091230

Abstract (en)

[origin: EP2341087A1] Process for the preparation of a polypropylene in a sequential polymerization process comprising at least two reactors connected in series, wherein said process comprises the steps of (A) producing in a first reactor a first polypropylene fraction, (B) transferring said first polypropylene fraction in a second reactor, (C) polymerizing in said second reactor and in the presence of said first polypropylene fraction a second polypropylene fraction obtaining polypropylene composition, wherein #¢aid first polypropylene fraction has either a melt flow rate MFR 2 (230 °C)of not more than 1.5 g/10min or of more than 2.0 g/10min, and comprises units derived from propylene and optionally at least one C 2 to C 10 ±-olefin different to propylene, #¢ the polypropylene composition has a melt flow rate MFR 2 (230 °C) of more than 2.0 g/10 min and #¢ the melt flow rate MFR 2 (230 °C) of the polypropylene composition (PP-C) is different to the melt flow rate MFR 2 (230 °C) of the first polypropylene fraction (PP-1), #¢ in the first reactor and second reactor (R-2) the polymerization takes place in the presence of a solid catalyst system, said solid catalyst system (SCS) has a porosity of less than 1.40 ml/, comprises a catalyst being the oregano-zirconium compound of formula (I) wherein X are legends with a Ã-bond to the zirconium (R), L 1 are identical residues selected from the group consisting of linear C 1 to C 20 alkyl, branched C 3 to C 20 alkyl, linear C 1 to C 20 alkenyl, branched C 4 to C 20 alkenyl, C 4 to C 12 cycloalkyl, C 1 to C 20 alkyl substituted C 5 to C 20 cycloalkyl, C 6 to C 20 aryl, and C 5 to C 20 cycloalkyl substituted C 1 to C 20 alkyl wherein the cycloalkyl residue is substituted by C 1 to C 20 alkyl, L 2 are identical residues selected from the group consisting of linear C 1 to C 20 alkyl, branched C 3 to C 20 alkyl, linear C 1 to C 20 alkenyl, branched C 4 to C 20 alkenyl, C 4 to C 12 cycloalkyl, C 1 to C 20 alkyl substituted C 5 to C 20 cycloalkyl, and C 6 to C 20 aryl, Y is C, Si or Ge, preferably Si, R 1 is C 1 to C 20 alkyl, C 4 to C 10 cyclo-alkyl, C 6 -C1 2 aryl, C 7 -C 12 arylalkyl, or trimethylsilyl, R 2 is C 1 to C 20 alkyl, C 4 to C 10 cyclo-alkyl, C 6 -C 12 aryl, C 7 -C 12 arylalkyl, or trimethylsilyl, and comprises a cocatalyst (Co) comprising an element (E) of group 13 of the periodic table (IUPAC).

IPC 8 full level

C08F 110/06 (2006.01); **C08F 2/00** (2006.01); **C08F 4/6592** (2006.01)

CPC (source: EP)

C08F 110/06 (2013.01); C08F 4/65912 (2013.01)

Cited by

KR20220016141A; US9902749B2; US9783625B2; US10005864B2; WO2020260021A1; EP2519550B2

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